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Created by Dr. Chris Chang, OBS is made of medical grade, stainless steel and titanium, and is highly praised by doctors for its simplistic design, low failure rate and excellent quality. OBS is your must-have secret weapon for maximum, reliable anchorage.



Smooth Mushroom Head

For comfort & retention of elastic chain

4-way Rectangular Holes

For lever arm to solve impacted tooth

Double Neck Design

Easy hygiene control & extra attachment



Made in Taiwan

New

Titanium Higher biocompatibility*

1.5 | 1.5X8mm

Stainless Steel**

2.0 | 2.0x12mm

2.7 | 2.0x14mm (with holes)



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* TADs made of Ti alloy have a lower failure rate compared to SS when placed in thin cortical bone. These results are consistent with a biocompatibility-related tendency for less bone resorption at the bone screw interface. Reference: Failure Rates for SS and Ti-Alloy Incisal Anchorage Screws: Single-Center, Double Blind, Randomized Clinical Trial (J Digital Orthod 2018;52:70-79)

** The overall success rate of 93.7% indicates that both SS and TiA are clinically acceptable for IZC BSs.

Reference: Failure rates for stainless steel versus titanium alloy infrazygomatic crest bone screws: A single-center, randomized double-blind clinical trial (Angle Orthod 2019;89(1):40-46)



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Dr. Chris Chang
DDS, Ph.D.

Taiwanese Lifestyle Through the Eyes of CC
Chapter 8.

Maximizing Spaces and Resources - Front yard aviary with water features

“I love how you respect the tree, not just cutting it off like most people do.” – Mr. Filippo Impieri (SVP, Emerging Markets, Envista)

Let's begin this chapter with a story of another of the Changs' neighbors, on his daily stroll. Upon passing the Changs' garage, something caught his attention and forced him to stop his steps to ponder thereupon. "The design of this garage ceiling is most curious!" he must have thought to himself. Having retired from a fairly large construction company, he is familiar with all sorts of popular front yard/garage designs that suit the lifestyles and likings of Taiwanese households, but never has he seen anything like this. A bright "chirp!" interrupted his train of thought as he realized the double-layered ceiling he was looking at, built with bulletproof glass on the top layer and mesh on the sides and the bottom layer, was actually an aviary – or to be more exact, part of an aviary.

As the Chang family's love for birds grows, so does the number of feathered residents in their household. Therefore, after they started planning the garage renovation, the idea of a front yard aviary followed. And this is when everything gets doubly exciting and inspiring.

In front of the house stands a 20-year-old Bishop Wood tree (*Bischofia javanica*). According to the residents' committee, it has been there since before the community was developed. Instead of having the flourishing tree removed, Dr. Chang was determined to make it an outstanding feature of the front yard aviary. However, incorporating it into the aviary design became something of a challenge. Completely containing a tree that is more than two stories tall (and still growing) within the walls of an aviary is definitely not a wise idea or solution. Furthermore, even if only the tree trunk were to be included in the aviary, with the top branches extending beyond the





Fig. 1: With a 20-year-old bishop wood, which extends beyond the mesh of the aviary, a hard+soft approach was taken during the closing of the ceiling around the tree trunks. The metal frames should reserve enough spaces around the trunks, with soft, flexible materials (such as wasted tires, canvases, hoses, ropes, etc.) neutralizing the compression formed at the connecting points.

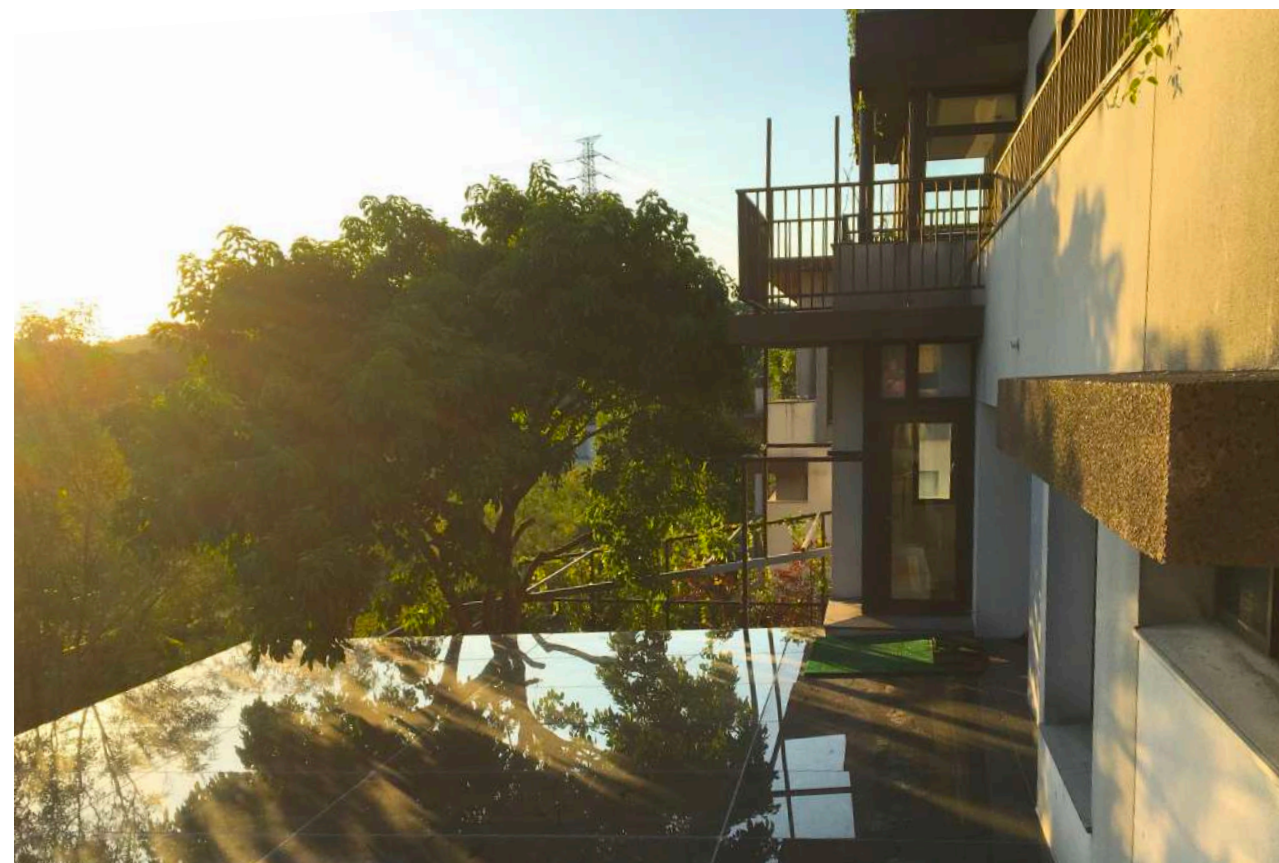


Fig. 2: Sunlight filtering through the leaves and branches of the bishop wood creates a harmonious yet splendid play between the light and the shadow. Imagine the same view without the tree. How much plainer and less intriguing it would be!

enclosure of the mesh ceilings, a crucial question remains: how should the interface be connected so as not to cause harm to the tree while at the same time making sure that the structure is firm and secure enough for the birds?

The worst thing to do would be fixating solid, metal components directly around the tree, as any changes or movements (in particular those from typhoons and/or earthquakes) could eventually snap the structures. Instead, sufficient space should be reserved between the metal components and the tree, with flexible materials tucked in-between to create buffering areas (Fig. 1). This is not only to prevent the precious birds from getting through the gaps and flying away, but more importantly, to serve as cushions so that the

Fig. 3: One particular room on the second floor looks out directly to the bishop wood. A door, which leads to the roof of the garage (the bulletproof glass top of the extended aviary) was opened to allow access from the room to the roof, which also serves as a deck for Dr. Chris's beloved cacti to sunbathe (see also page 87, top right corner).

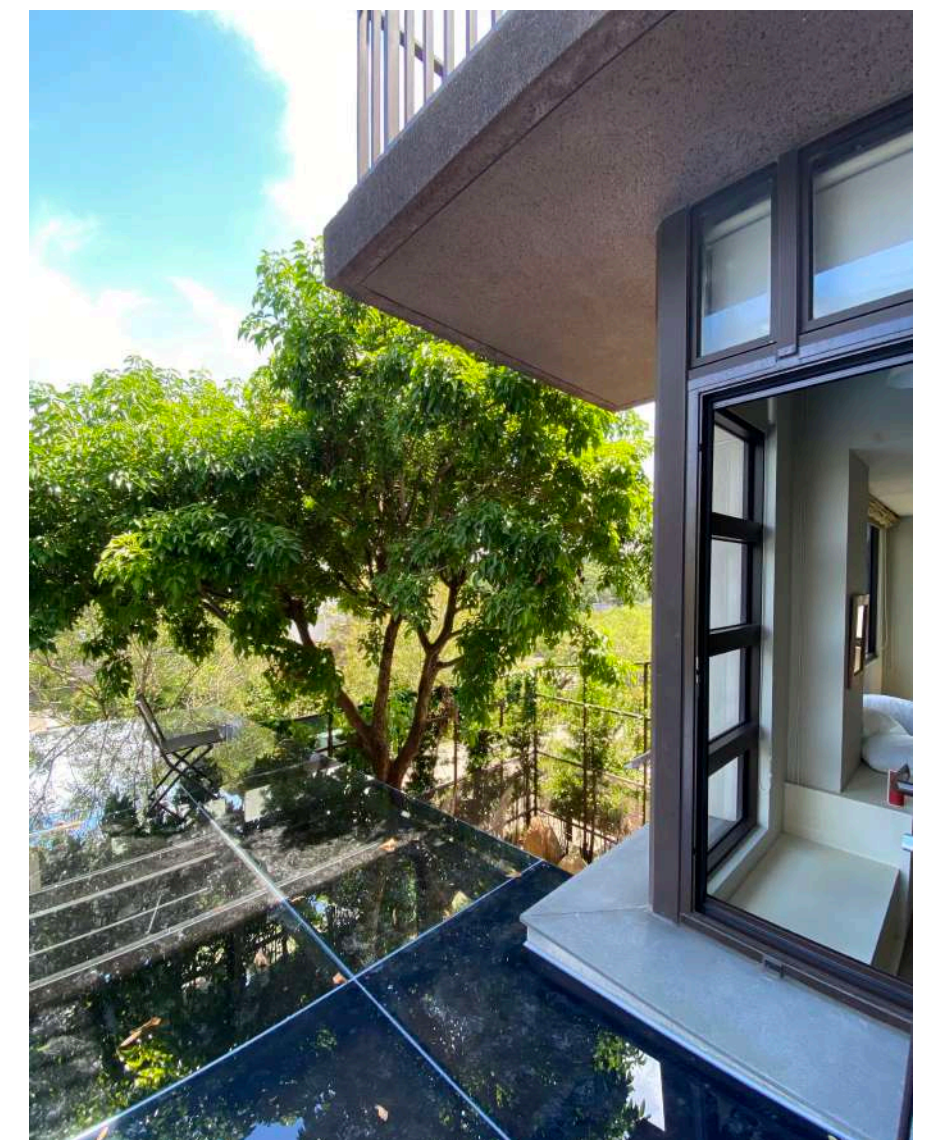




Fig. 4: Lying among the burgeoning trees and bushes, the pond adds depth and a trace of mystery to the aviary. A tap was installed on the side to dispense hot water, turning the pond into an indulgent outdoor hot tub.

compression force at the connecting points can be contained and neutralized.

The other highlights of the Changs' front yard aviary are the water features - a pond and a water fountain. A riverbed design was chosen for the pond with an eye to enhancing the feeling of being surrounded by nature. After digging out the shape of the pond, plastic liner was used as a barrier to prevent pond water from being absorbed into the ground, in other words, transforming the hole into a huge water storage tank. To avoid tearing the plastic liner, non-woven cloth was placed on both the top and the bottom of the liner as protection. On top of that, drainage trays were paved

for an extra, stronger layer of barrier before stones were added in to complete the base (Fig. 5). At the corner of the pond, a cascade was created by pumping the pond water to a designated high point and letting it flow naturally back down into the pond, with a skimmer at the far low end of the pond to trap fallen leaves and branches. To elevate the level of indulgence, a tap was installed on the side to dispense hot water, which turns the pond into an outdoor hot tub!

Adding to the fun, a water fountain, also in an unadorned, stony style, was planted among the greens (Fig. 7). Like any other devices that rely on water circulation, the three essential parts are water storage,



Fig. 5: For practicality, different liners were used to build the pond; however, they are nowhere to be seen in the completed landscaping. The devil is in the details, just like how the finishing steps in orthodontic treatment are what elevate the outcome from good to great.



Fig. 6: Big rocks around the pond are perfect seats to enjoy an outdoor concert! It's a treat combining music, bird songs, as well as water dribbling, leaves rustling in the winds, and all the magical sounds of nature.

the filtration system, and the pump. (Revisit chapter 1 for a detailed guide on building a complete filtration system.) At the base, a hole was dug in the ground to fit the plastic storage tank of the fountain, the lid of which has several gaps that allow water to flow through. On top of that, a layer of non-woven cloth and pebbles was laid to serve a filtering function, with the latter also adding sensuous pleasure and giving the aviary landscaping a further hint of nature. Once the pump has been sat in place, the fountain exterior of choice can be installed. And voilà! The only thing remaining on the to-do list is to sit back and enjoy as the water trickles down.

The birds in the aviary are probably the biggest fans of the fountain. On the one hand, the circulation keeps the water fresh for the birds to quench their thirst. On the other, the gentle dribbling at the bottom of the fountain provides just the perfect amount of water for the birds to clean their little bodies and beautiful feathers (Figs. 8 and 9). While still water symbolizes depth and profundity, running water brings life and vitality. The Changs' front yard aviary exquisitely incorporates all these fascinating characteristics into one.

Aside from the original front yard garden area, the aviary extends all the way to the ceiling of the garage mentioned in the beginning of this chapter, making use of the vertical spaces that are often left idle. Upon being asked what happens when bird faeces land all over the car, Jenny - Dr. Chang's youngest daughter - replied with a bubbly smiling voice: "In our home, birds are far more important than cars, so that's not a problem!" Dr. Chang and his family love the new front yard aviary so much that they eat meals, work, and spend their leisure time immersed in it, especially



Fig. 7: Moving water not only brings auditory pleasure, but is also visually pleasing and soothing to look at.



Figs. 8 & 9: The fountain exterior design provides steps for the birds to perch while getting hydrated. At the bottom, the birds make use of the gentle dribbling to clean their beautiful feathers.



Fig. 10: Mr. Filippo Impieri (right) was warmly welcomed by Dr. Chang's two daughters, Jenny (center) and Kristine (left), as well as the vivid-colored birds in the aviary.

as the day and night as well as weather changes bring out all differing kinds of beauty of the space.

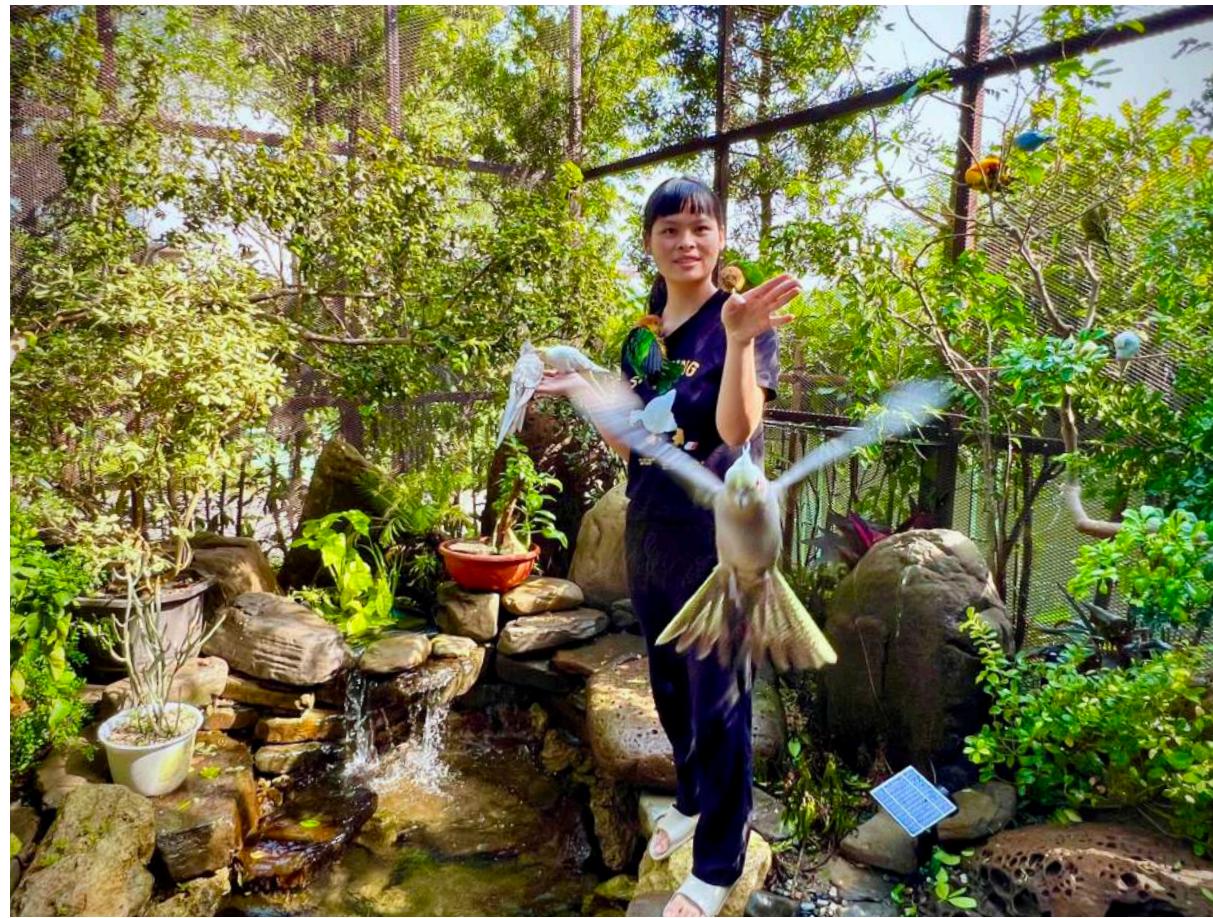
Recently with the Taiwanese border gradually reopening to the world, the Chang family had the chance of hosting their first guest from abroad, Mr. Filippo Impieri, Envista's Senior Vice President (SVP) of Emerging Markets. After being shown the newly completed front yard aviary, Mr. Impieri commented "I love how you respect the tree, not just cutting it off like most people do." Through all the spaces reserved and designed for the living creatures within the household, *respect* is the tune to which every arrangement sings and dances, and this reciprocally allows the creatures it hosts to sing and dance their natural songs and dances so beautifully to their hearts' content.

Desk editor of JDO & a wildlife enthusiast*

Annie Chen

*Title bestowed by Dr. Chris Chang
Special thanks to Mr. Paul Head for refining this article

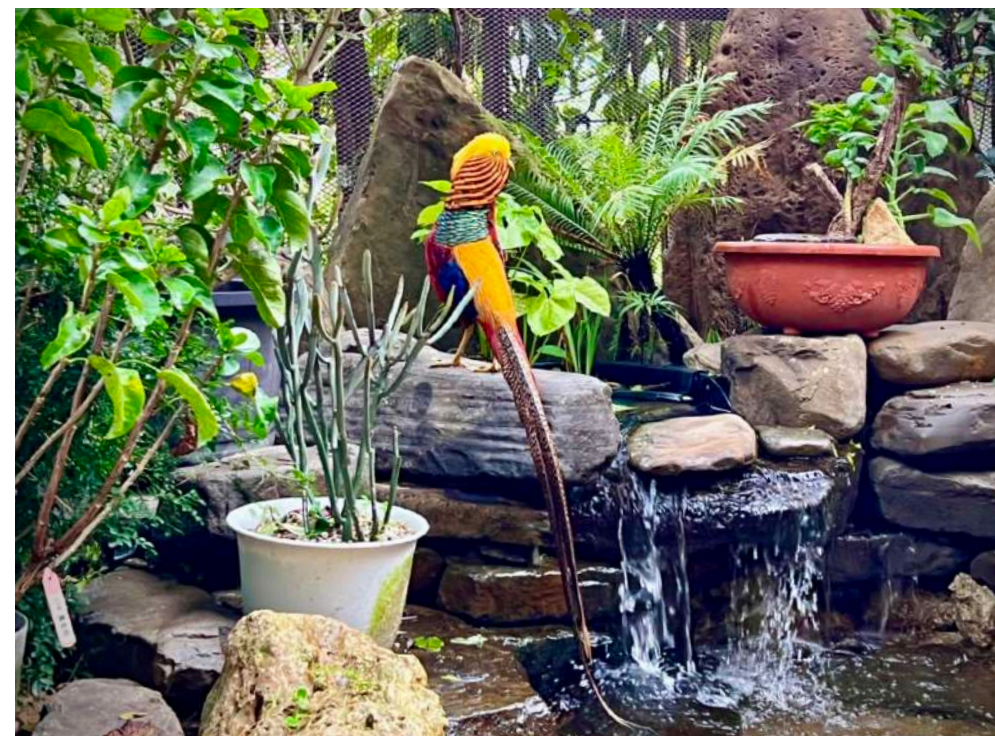


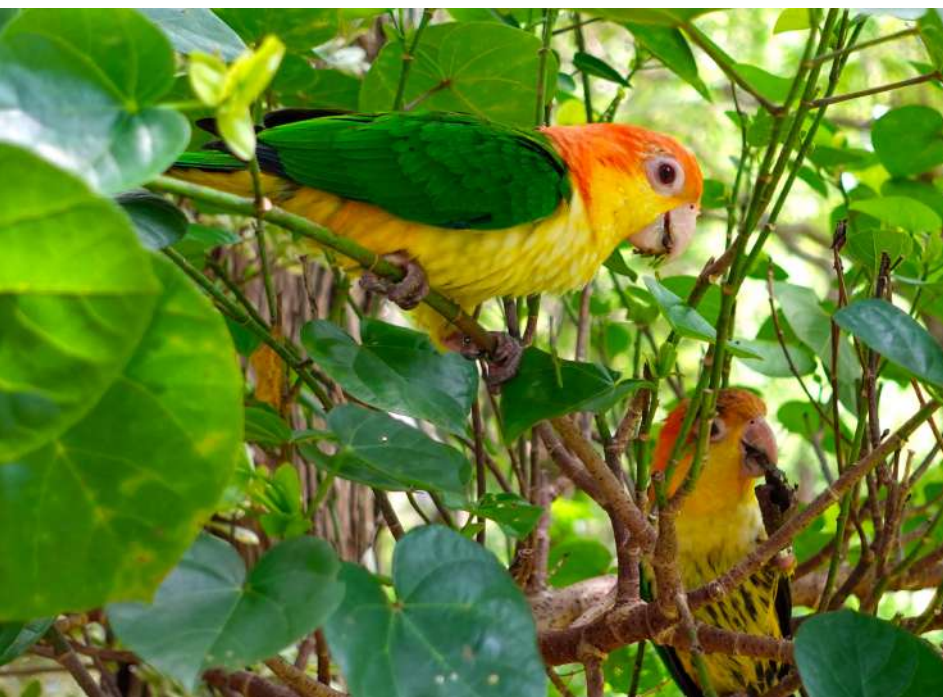


In early December, 2022, Dr. Kenji visited the Changs' residence after the TAO 2022 Annual Meeting.



Two of Beethoven's former orthodontic patients, Heather and Pei-Chien, visited the Changs' aviary at the beginning of 2023. Best wishes to them both - Heather for her ongoing professional golf journey in the U.S., and Pei-Chien for the beginning of a career as a commercial flight pilot. Enjoy the best time of your life!





Fallen branches and sticks of different thickness are fastened all around in the aviary as auxiliary perches from which the birds can find the one(s) that best suit(s) their claws. Wild berries, flowers, and seeds are also fasten on the perches to mimic their natural form in the wilderness, encouraging the birds to forage naturally.